Our Reference: 200312860-1 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Gregory J. May
Serial Number:	10/820,409
Filing Date:	April 8, 2004
Examiner/Art Group Unit:	Jeffrey M. Wollschlager/1732
Title:	IDENTIFIABLE STRUCTURES AND SYSTEMS AND METHODS FOR FORMING THE SAME IN A SOLID FREEFORM FABRICATION SYSTEM

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Isaac Farr, hereby declare the following:

1. I am a citizen of the US residing at Corvallis, Oregon.

2. I received a Ph.D. in chemistry from Virginia Tech, Blacksburg, VA in 1999.

I joined Hewlett-Packard Company in 1999 and have been employed there ever since as a researcher in their sites in Corvallis, Oregon and Aguadilla, Puerto Rico.

3. I have extensive knowledge in the fields of both inkjet technology and solid freeform fabrication technology, having performed long-term research in both of these fields, including combinations of the two, while being employed as a researcher at Hewlett-Packard Company. I am well acquainted with the above-referenced application, having conferred with the inventor of the above-referenced application about issues related to the application on several occasions.

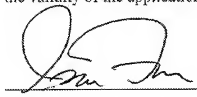
4. After reviewing the above-referenced application, the present office action and the cited art, including Van der Zel (WO 02/085241) and Jagmin (US Patent No. 5044955), I have the following comments. Van der Zel teaches fabricating artificial teeth with solid freeform fabrication methods, including using pigments in the solid freeform fabrication materials to impart a color to the outside surface of the artificial tooth that matches the real teeth surrounding it. Jagmin teaches inserting an identification tag into a drilled hole in a real tooth during the filling of a cavity in the tooth. The tag is of a material which can be readily imaged by x-ray or other non-invasive imaging procedure in situations where a positive identification of the person is not otherwise easily obtained. Neither Jagmin nor Van der Zel teaches anything about fabricating completely by solid freeform fabrication methods an artificial tooth with a readily imageable and identifiable structure embedded in it.

With regard to the question of whether the combination of Van der Zel and Jagmin suggests how to achieve such an identifiable structure completely by solid freeform fabrication methods, I would answer that it does not. I say this for the following reasons. The identifiable structures of the present application are made on-the-fly, specifically designed to work with the other materials used in the tooth structure being fabricated and in the solid freeform fabrication process itself. As with all materials ejected by inkjet technology, the formulation of an ink for inkjet applications is a very specialized discipline often requiring months or years to optimize fluid properties, including viscosity, surface tension and particle size. In the case of the inkjetted materials used to set down the identifiable structures in the tooth, it is often necessary to suspend solid materials in a solution that is to be applied by inkjet to the inner layers of the tooth. It is always the case that methods of suspending solid materials in an inkjettable solution, such that inkjet is a useful dispensing method for the solid material, is quite challenging.

It is my opinion based on my knowledge of both inkjet technology and solid freeform fabrication technology, that the combination of Van der Zel and Jagmin does not teach nor suggest how to achieve an identifiable structure in a solid freeform fabricated tooth using only the methods of solid freeform fabrication combined with

inkjet. Such methods demand an expertise that routine experimentation by one familiar only with the basic processes of solid freeform fabrication would not be able to achieve.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and, that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Isaac Farr

9/18/07

Date